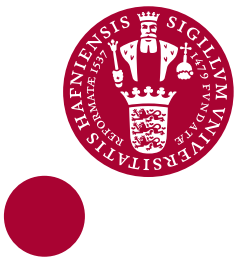

Understanding users

Segmentation from man-made typologies to computer-generated clusters

Johannsen, Carl Gustav Viggo

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Understanding users: Segmentation from man-made typologies to computer-generated clusters

Carl Gustav Johannsen
The Royal School of Library and Information Science, University of Copenhagen, Denmark

Abstract

Purpose

Segmentation of users can help libraries in the process of understanding user similarities and differences. Segmentation can also form the basis for selecting segments as target users and for developing tailored services for specific target segments. Several approaches and techniques have been tested in library contexts and the aim of this article is to identify the main approaches and discuss their perspectives, including their strengths and weaknesses in, especially, public library contexts. The purpose is also to present and discuss the results of a recent – 2014 - Danish library user segmentation project using computer-generated clusters. Compared to traditional marketing texts, this article also tries to identify users segments or images created by the library profession itself.

Design/methodology/approach

Basically, the article is built upon a literature review concerning different approaches to user segmentation in especially public library context from approx. 1980 till now (May 2014)

Findings

The article reveals that - at least - five different principal approaches to user segmentation have been applied by the library sector during the last 30-35 years. Characteristics, strengths and weaknesses of the different approaches are identified, discussed, and evaluated.

Practical implications

When making decisions on future library user surveys, it is certainly an advantage concerning the ability to make qualified decision to know what opportunities that are at hand for identifying important segments

Originality/value

Some of the approaches have been treated individually in the library literature; however, it is probably the first time that the professions own user images and metaphors are dealt with in a user segmentation context.

Keywords

User segmentation; public libraries; cluster analysis; correspondence analysis; lifestyle; user images; user metaphors

Paper type Research paper

Introduction

During the latest 30-40 years, the ways the public library profession has looked upon and tried to understand their users have changed in several respects. This article will, in particular, focus on different approaches to segmentation (Boter, 2005; David, 2012; Gibbons, 2013) in terms of the different typologies and classification schemes of user types which have been applied by library professionals to achieve insights into the needs and preferences of their public library users. Indeed, various types of social stratifications and user images - or discourses - concerning users have influenced professional literature, debates and conceptual frameworks. Also the technological opportunities to collect and analyze large amounts of complex user data have developed, especially, through the availability of advanced statistical software packages enabling methods such as correspondence and cluster analysis and the like (Bacher 2004).

The library profession has, since the late 1970s, tried to understand its users in - at least - five principal, different ways.
One approach has been to focus on their library use patterns and preferences, distinguishing, for example, between daily or monthly library use, between different purposes for library use (study or leisure), etc.
Another way to classify users, has been a traditional social stratification approach, relying on established demographic and sociological categories based on, for example, age, gender, education, income, and the like, in order to examine and understand how and why different types of users have different needs and preferences. Among others, this approach has revealed that different groups of students have very varied probabilities of success using the public library. The survey also indicated that students tend to look at libraries as a whole without making clear distinctions between different types of libraries, expecting the whole system to be seamless. (Pors, 2006).
A third approach has been to distinguish between users entirely in terms of marketing oriented and Bourdieu-inspired lifestyle characteristics, using, for example, psychographic variables which seek to classify people according to their personality traits, benefit and behavioral variables (Adcock et al., 1995, pp. 85-99; Jochumsen & Hvenegaard Rasmussen, 2000: pp. 53-65; Jung, 2003) . The construction of different persona (Brigham, 2013) belongs to this tradition.
The fourth - and probably the latest - approach to understanding users has been inspired by marketing theory too; moreover, computers have also been applied to conduct advanced twostep cluster analysis procedures to identify and describe which categories and segments of library users would make most sense in service development contexts. In both approaches, graphical presentation formats have been used to communicate the results of the statistical analyses. Thus, there are several similarities between this and the preceding approach. The main difference – according to Michael and Tilde Moos-Bjerre, the authors of the latest and most comprehensive Danish user survey is that the ladder approach combines lifestyle, attitude and preference criteria with traditional demographic criteria (Interviews made April 28, and May 7, 2014). Compared to traditional demographics the fourth approach has obvious advantages, enabling more precise and rich pictures of needs since it includes both demographic characteristics (sex, age, income, education,) and data on different kinds of cultural preferences, habits and activities. Such data are, typically, not included in the categories of official statistics. Approaches like that make it possible, for example, to operate with precise distinctions between user categories which are not particularly occupied with achieving social contacts and, at the same time, appreciates travelling and categories with other group which also appear to have a minor interest in social life but who - compared to the mentioned "individualists" - are much more interested in computer games than in travelling and tourist experiences. The ladder category is labelled "nerds" in the *Future of libraries* survey report (Moos-Bjerre 2014).

A fifth, quite different and much more subjective, approach, has been to construct different user images or metaphors based on a combination of a variety of demographic, ideological, psychographic and information needs oriented characteristics and classifications. Well known examples of such user images are the user perceived and understood as a – often information poor and socially disadvantaged - client, an image which played a significant role through the 1970s and early 1980s, especially, in the community information literature (Bunch,1982; Martin, 1989; Usherwood, 1989); during the following decennium, the late 1980s and the 1990s, the professional user understanding was influenced by another, and - in many respects - quite different user image, namely, the user as a customer. That image was particularly influential within areas such as business information provision to local companies through

public libraries (Jackson, 2002; McKnight, 2012;McKnight, 2008; Miao, 2006; Rowley, 2000; Rowley, 1997). The latest example of an influential library made user image, is probably the user as a creative partner, an image which has influenced several recent and prominent library building projects, questioning whether new libraries are designed as "cultural havens for the creative class" or as libraries for all, (Skot-Hansen et al., 2012, p.16). Sometimes, different images are described in the literature as different discourses (Hedemark, 2005). Compared to the other four approaches, the image or metaphorical way of seeing and understanding users are seldom entirely based on precise, identifiable and measureable quantitative criteria; rather they consist of a mix of qualitative and quantitative data – often mingled with normative claims and ethical considerations. Sometimes such blurred characteristics make it difficult to distinguish between, for example, what the member of the different categories actually demands, their so-called "subjective" information needs, and what they ideally should demand, according to certain analyses of the profession of the users' "objective" information needs. For example, according to the image of the user as an information and resource poor client - or even victim - there often seems to be an obvious conflict between subjective information needs, for example, for experiences and entertainment and objective needs for education and political consciousness to improve their present unfavorable social situations. On the contrary, the image of the user as a customer, prescribes that it makes no sense to distinguish between objective and subjective needs. Obviously, here, the primary task of the public library is to listen and to deliver what its customers demand. Here, libraries are certainly also allowed to offer new, innovative services to their customers; however, the basic premise is that the customer is the ultimate quality judge.

To sum up, we can therefore observe at least five different ways of understanding users and groups of users:

1) through basic library use patterns,
2) through traditional socio-demographic categories,
3) through entirely lifestyle based criteria,
4) through machine-generated clusters combining different – both lifestyle and demographic - criteria into meaningful user segments.
5) through organically developed qualitative images and metaphors,

This article, here, will contain an examination of the strengths and weaknesses of those five approaches which have all been applied by the library sector and its professionals to facilitate a better understanding of its users; besides, the mentioned approaches have influenced professional literature since the late 1970s. This article intends both 1) to sketch out the development of the various public library approaches to categorizing and understanding their users and 2) to characterize and pinpoint the differences in terms of strengths and weakness of the five approaches and their resulting categories and segments. The evaluation will especially focus on the balance between analytical reliability and how recognizable the distinctions appear in practical contexts. The latest strain, computer generated - or rather computer facilitated - segmentation, in particular, is interesting in a Danish public library context, since a recent, 2014, published major project report on the future of Danish libraries creates interest by presenting 10 different user segments, identified through two-sided cluster analyses of a representative sample of 2,000 Danish public library users from the age of 15 years with data from 2013 (Moos-Bjerre, 2014). The survey was initiated by the Danish , "Think Tank of the Libraries of the Future", organized by the Danish Library Association.

Then analyses and comparative evaluations of how those different approaches are likely to influence the development of future library services will be made. The empirical data will be taken - among other things - from two recent (2011-12) public library project evaluations prepared by the author, including both staff-less and staff-intensive public library services. The article will focus on the following research questions:

1. What characterizes the strengths and weaknesses of five different approaches to segmentation of library users?
2. How user twostep cluster analysis based segmentation differs from earlier approaches? and
3. How, in particular, different user images or metaphors have influenced how users and user needs are and have been understood by the library profession in the Western World the last 30-40 years?
4. How the different perceptions and approaches have influenced the modification of existing and the development of new library services – based on the recent Danish case studies.

The five different approaches

First, I'll deal with the first research question, further characterizing the five different approaches to user segmentation. The approaches will be examined by the same criteria and procedures. However, the fourth approach utilizing computer- generated clusters and the fifth metaphorical image approach, will be treated more detailed. Besides a short description and illustrative - mostly public - library examples, four aspects or criteria, characterizing strengths and weaknesses will be systematically dealt with:

1. Reliability
2. Public library relevance
3. Measurability
4. Predictability

The reliability of an approach, here, refers to the degree to which the categorization is reliable which means the extent to which there exists procedures allowing others to classify according to the scheme and to achieve – at least approximate – the same results. As an example, approach number two possesses a high degree of reliability since its categories are well-defined. In contrast, approach five has a lower degree of reliability because its definitions and criteria are more blurred.
Public library relevance deals with the extent to which the categories make sense and can be applied directly to public library contexts. Here, categorizations using pure socio-demographic (approach number two) and lifestyle (approach number three) criteria are judged less public library relevant than the other three approaches. In fact, this judgment is based, primarily, on the origins of the five approaches where library use patterns, library user images and – at least – the Danish twostep clusters all derive from the library sector whereas demographic and lifestyle criteria are developed outside the library sector.
Measurability refers to the extent to which it is possible to define precisely and measure the size of a given segment or group.
Finally, predictability, indicates the degree to which it is possible to predict the interests and preferences of particular segments. Here, socio-demographic variables are rated lowest because preferences as to library cultural and informational offerings, being based on motivational and attitudinal elements, often runs across socio-demographic borderlines.

The first of the five approaches, basic library use patterns, typically, distinguishes between different use patterns related to different materials (digital or printed, media (books, films, music), and services (IT courses, lectures). Data on the use patterns of different materials, services, and facilities are important and useful, for example, to estimate future demand for specific offerings. However, although data on many library transactions are now available in digitized form, it is for several reason difficult to utilize the data further to achieve a deeper understanding of user needs because the approach does not deliver specific knowledge of the user – only about their use. Although, it is technically feasible for a library to use loan statistics to estimate the preferences of not only segments but also on the individual user level and to suggest new titles according to such findings, such practices are often restricted by privacy protection regulation etc. Nevertheless, demand for specific book titles, for example, can be expressed quite precisely in terms of average waiting time (days or months). In Denmark, such data on demand for specific titles, are made available on the OPAC's of many public libraries which creates a high degree of transparency. In other words: the measurability of the approach is high. The predictability, however, is not optimal since it is not always evident what creates a certain demand or the opposite: the topic, the genre, the authors´, fashion, quality, awards …?

The second approach, which provides data on traditional socio-demographic variables such as age, sex, occupation, education, income, etc. are also relevant and useful in several public library contexts. The reliability is high according to established criteria and precise definitions. However, in many situations, especially concerning issues related to cultural consumption patterns, it is often insufficient to know, for example, that a certain user belongs to the category of the "25 to 44 years old" when trying to understand the persons library related needs for experiences and/or knowledge. The library relevance, thus, should therefore be judged as low. On the other hand, it should be relatively easy to calculate the size of different socio-demographic strata within a given library district. In many cases, such data are also relevant to predict certain cultural or literary needs and preferences. However, in general, the relationships between economic and cultural factors are more complex than to be deducted from socio-demographic statistics. Therefore the predictability of the approach is judged as low. Here, supplementary data on lifestyle, preferences, attitudes, and the like are, typically, required to understand and explain variations concerning preferences and to predict user behavior. Indeed, people at the same age and sex may exhibit quite different information and library use patterns, preferences as to, for example, the importance of social needs, services etc.; similarly, people with different social-demographic placement may share the same preferences for specific library services.

However, it is difficult to determine precisely when the library sector became aware of the limitations of the traditional socio-demographic approach (Mote, 1962). Thus, in a comprehensive review on user studies from 1994 by Tom Wilson (1994), concepts like segments and segmentation do not appear at all although alternative terms such as "categorizations" are used instead. The main strengths of the socio-demographic approach is that data are available through official statistics: the occurrence of different income groups or social and economic strata. The extent of more or less standardized definitions makes comparisons with other data on social patterns , preferences, media usage, and political preferences relatively easy. The main weaknesses of using traditional socio-demographic categorizations to deal with cultural habits knowledge of traditional social class and economic placement no longer works to explain cultural consumption; in Denmark, for example, newspaper reading habits are no longer as class related as they were in the 1960s: then - if you happened to know a person's social position, for example, as a blue-collar worker, you could quite precisely predict his political preferences, newspaper choice, leisure

interests etc.(Schultz, 2007). It is no longer possible. Similarly, the relationships between different life style segments can also shift; indeed, a shift in the basis of taste from snobbishness to "omnivorousness" among Americans of highbrow status took place from 1980s to the 1990s (Peterson & Kern, 1996).

The third approach, differs from the socio-demographic by being based on quite different social classifications. Instead, of objective categories like educational and income groups, lifestyle characteristics refer to softer element such as opinions, preferences, values, habits, and the like. A typical example of a life style based classification forms the RISC-model (Research Institute on Social Change) used by Gallup, AIM Nielsen and similar market analysis agencies. Here, life style orientation are depicted by two dimensional models containing, for example, the dimensions modern versus traditional and community minded versus individualistic. Sometimes each of its four cells are named after a certain colour: the blue segment, here, indicates a modern and individualistic orientation whereas the red segment represent a traditional and community oriented .Typically, data on such issues are not collected through official statistic channels but rather through regular specific surveys, for example, on cultural consumption, leisure time activities or on various ad hoc surveys based on questionnaires. Furthermore, the aggregation of data from the surveys often utilizes advanced statistic methods such as correspondence analysis to create broader categories based on, for example, overall lifestyle orientations. Often each of the dimensions is identified through several – sometimes about 40 – different indices covering values and normative orientations. Furthermore, each index contains, typically, three to five different questions (Dahl, 1997: p. 20). Religious orientation, for example, should be identified through several questions on e.g., church attendance, belief in God, prayer, and the like. One question, about church attendance, is obviously not enough. Nevertheless, the methodological principles are usually well defined and the reliability, consequently, high. On the other hand, the library relevance varies, according to the overall purpose of the survey in question. Surveys aimed at cultural consumption in general do not address the same issues as surveys tailored towards public libraries and public library users. The amount of measurability, of course, depends on, among others, the size and method of the sampling procedures. Based on a representative sample, however, it should be possible to judge the size the user segment on a national level. Finally, the predictive power, depends on also, among others on the specificity of the survey.

Although, Wilson (1994) did not use the term "segmentation", he was obviously aware of the need for new approaches to user studies by considering a shift from focusing on different uses of information towards focusing on different users. Another trend which Wilson calls for in 1994 is improvements as to the methodologies applied in user surveys. In particular, he misses the use of proper random sampling methods to facilitate generalizations concerning the total population and in general more advanced statistical analysis. Rowley (2000), also spoke in favour of changes. When considering how to segment library users into groups and targeting library services to meet the needs of those groups or segments, she recommended to use the "language of marketing" Indeed, she sees user or customer segmentation as a sign of a proactive approach and a useful means in connection with relationship marketing strategies, loyalty programs, and the like. Segmentation offers further benefits such as a better understanding of user needs and preferences, a better understanding of actual and potential competitors and, finally, a more effective targeting of library resources and the possibility of more tailored marketing communication. She distinguishes between traditional demographic segmentation variables (geography, location, age, sex, occupation and social class) and psychographic and lifestyle criteria (attitudes, beliefs, activities, behavior, benefits sought, frequency of use, purpose of use, loyalty, and the like). She also mentions that data on the

traditional variables are popular because they are readily available. However, she does not go into detail with how psychographic and lifestyle variables are collected and how more complex segments are constructed.
Here, a distinction is made between the former approach to user segmentation based entirely on life style variables and the fourth approach, based on a combination of life-style and socio-demographic variables. The approach has recently been applied in a major, 2014, Danish public library survey: *Fremtidens biblioteker – målgruppebaseret viden til biblioteksudvikling* [*The Libraries of the future – knowledge on user segments for library development*] (Moos-Bjerre, 2014). On the parameters mentioned, this survey shares the features of the third group on reliability and measurability. However, on library relevance and predictability, it scores higher because the survey has been specifically tailored towards a Danish public library context. Below we'll go into further details as to the survey mentioned.
The fifth and final approach, segmentation through images and metaphors, is in more respects different from the preceding four approaches. First, it is not documented through formal documents and standardized classification systems. Rather, the library user images and metaphors, are identified primarily through texts and discourses available in various library journals, pamphlets, and books (Hedemark, 2005; Jochumsen 2006; Johannsen, 2009). Its informal, its often fluid and prejudiced character, and discourse traits make both its reliability and measurability rather low. On the other hand, its origin in library professional contexts creates a high, public library relevance. As to predictability, experiences vary from low to medium. In short, the main characteristics of five approaches can be summarized in the table 1 below.

Table 1: Strengths and weaknesses of the five perspectives

	Reliability	Public library relevance	Measurability	Predictability
Library usage variables	HIGH	HIGH	HIGH	MEDIUM
Demographic variables	HIGH	MEDIUM	HIGH	LOW
Lifestyle variables	HIGH	MEDIUM	HIGH	MEDIUM
Computer generated Cluster	HIGH	HIGH	HIGH	HIGH
Images and metaphors	LOW	HIGH	LOW	LOW-MEDIUM

Source: Carl Gustav Johannsen

Machine generated cluster analysis
We'll now address, the second research questions: How user twostep cluster analysis based segmentation differs from earlier approaches?
Although, the recent Danish survey: *The Libraries of the future – knowledge on user segments for library development* (Moos-Bjerre, 2014) is unique in many respects in Danish contexts, it is not at all the first cluster analysis based survey within the library sector. Nagata (2007; Nagata, 2011) has examined the traditional understanding of public library user

profiles based on statistical factor analyses; Stenmark (2008) has applied automatic clustering techniques to separate users into distinguishable segments, based on their search behavior. Already in 1994. Wilson (1994, pp.14-15) dealt with the issue – although in an academic library contexts. He here compares subjective classifications with cluster analysis, finding the ladder more robust. He also reviews an earlier scholarly article (Palmer, 1991) which identified – through cluster analysis - five different, imaginative named user groups: "non-seekers", "lone, wide rangers", "unsettled self-conscious seekers", "confident collectors" and "hunters".

Another, even earlier – back in the 1970s - antecedent of cluster analysis for segmentation purposes forms the theoretical framework of the prominent and influential cultural sociologist, Pierre Bourdieu, which has influenced much library sociological research. Indeed, Bourdieu's "lifelong commitment into statistics" lead him already in the 1970s, to the choice of advanced statistical methods such as multiple correspondence analysis and geometric modeling of data (Lebaron, 2009). This "essential aspect" of Bourdieu's entire theoretical framework, including the central concept of "field", has been "somewhat neglected" by those who have written about his theories together with his "constant concern for quantifying his data material and putting his thinking in mathematical terms" (Lebaron, 2009). Bourdieu also combined variables on tastes and cultural practices with socio-demographic and occupational questions to visualize the sociological relations between the tastes (lifestyles) and social positions.

The Libraries of the future (the main report is in Danish)(Moos-Bjerre, 2014) is based a questionnaire survey among a probability sample of 2,000 Danes – both library users and non-users. The quantitative survey is supplemented by a number of focus group interviews and individual interviews (Moos-Bjerre, 2014, p.7, p.13). Based on nine selected variables (both socio-demographic (e.g. age and education) and lifestyle and psychometric(digital orientation, social aspect and "nerd-ness" indices), 10 different segments are iteratively identified through twostep cluster analysis (Moos-Bjerre, 2014, pp. 34-39) . Moos-Bjerre in an interview (April 28, 2014) emphasized the iterative character of twostep cluster analysis and the challenges, finding a balance between statistical fit and how recognizable the identified segments appeared to the library profession. Rowley (2000, p. 160) has emphasized three basic requirements for segmentation approaches to work: 1) the size of the segment should be known, 2) the segment should be sufficiently large to justify efforts and expenditures, and 3) the segment should be accessible through appropriate communication channels. Here, the size of the ten segments where four of them contain target groups between 15 and 29 years and six plus 30 years individuals vary from 2 percent (young parents between 20 and 29 years) of the plus 15 years population to 19 percent (lower middle class between 40 and 69 years). The first of Rowley's three requirements are then met. As to her second requirement, the answer very much depends on whether the context is a national or a regional or local library campaign. Indeed, the size of some of the segments, was too small to allow calculations of the impact of specific factors on segment level. The report, for example, documents that Digital library use (e-index) is influenced by seven different factors - in varying degrees (Moos-Bjerre, 2014, p. 109). It has not been possible, however, to specify the influences onto the different segments, since, for example, the young parents only constitutes 2 percent of the sample (which equals about 40 respondents), too few to make sense in a statistical calculation. Also, the third of Rowley's three requirements, seems to contain certain challenges. What communication channels, for example, are obvious for communication campaigns targeted towards nerds or people belonging to the elderly part of the lower middle class? Nevertheless, the cluster analysis based survey results contains a lot of inspiration for numerous targeting efforts and library policy priority making. There are , for example, considerable differences – from 39 to nine percent - among the 10 segments

about opinions to which extent the internet, Google, and e-books have made libraries superfluous and similarly, to what extent meeting place functions or library cafés would lead to increased use (Moos-Bjerre, 2014, p. 173, pp. 128-134). As mentioned, a balance between statistical fit and professionally recognizable segments was regarded as desirable. However, one may also consider why segments often mentioned in library debates apparently have not been among the identified segments. The creative class, for example, is a category which has legitimated considerable effort both in terms of urban and library planning. According to Skot-Hansen (2012) cities in the global competition are being planned and marketed as "creative cities" - but where is the creative class among the 10 identified segments? Is the whole concept an illusion or do the creative segment reside within other segments?
In the Danish report, it is emphasized that the report can serve different purposes – both on a strategic and on an operational level (Moos-Bjerre, 2014, s. 6). Within the strategic goals are mentioned development of new or modified services, increased user satisfaction and shares of different user groups. Compared to the final category of segments to be dealt with in this article, this goal may appear relatively narrow. As will be shown below, the image of the user as a client (or even victim), reveals broader, societal concern far beyond user share optimization. Another question which the focus on clusters may raise, is whether the predefined segment focus blurs for alternatives. In the report, for example, it is emphasized that persons particularly interested in computer games are male nerds between 30 and 49 years (Moos-Bjerre, 2014, p. 55). This observation is probably correct; but does it also imply that access to computer games in libraries should be targeted only towards this segment? The topic is interesting because recent Norwegian experiences show that also non-nerds, such as senior citizens could gain from access to at least certain computer games. We'll now consider, in more details, the fifth approach which differs significantly from the other four.

User images / metaphors

User images or user metaphors are often - but not always - closely related to established socio-demographic variables such as income, social status and education. The client/ victim image, for example, has been identified through varying objective social criteria. In *Community Librarianship: Changing the Face of Public Libraries,* Martin (1989: 72-73) explains that "many libraries either ignored the disadvantaged or else gave them the kind of standard, undifferentiated service that largely failed to meet their needs." A list of people most likely to be classed as disadvantaged would include "the economically deprived, including the poor and the unemployed; ethnic and sexual minorities; people in institutions; deprived young people and senior citizens; people with language and literacy problems; and the physically and mentally "handicapped". Depending on whether the victim groups were seen socially disadvantaged people, which was the common denotation in the 1970s and 1980s, or as immigrants and ethnic minorities, which started in the 1990s, their weaknesses could be recognized through social and economic statistics. Often, the intention of library professionals was not only to attract socially disadvantaged people as library users but rather to help them to change their present unfavorable situation. The same situation appears later concerning immigrants and ethnic minorities. Compared to the preceding four segmentation approaches some differences appear conspicuous. The ultimate goal is not only to increase library use or to transform non-users into library users. The goal is often a broader societal issue. Furthermore, the categories not only reflect pure sociological contexts but also normative issues such as the desire for social equality. The most distinguishing difference is, however, that the segment of disadvantaged users was developed not by statistical agencies or marketing bureaus but within the profession itself. From the late 1970s and 1980s, a number of other user images or discourses about users were developed. They were sometimes quite different from the above mentioned disadvantaged user image. The user as a customer,

characterizing library discourses in the 1980s and 1990s, thus, were quite different from discussions concerning the disadvantaged clients or victims. A customers represents to a lesser degree than a client a sociological category – the concept is rather a new public management oriented and inspired normative framework. The latest user segment developed within the library profession, is certainly, the creative class which plays a significant role in many library development projects (Skot-Hansen, 2012). Indeed, through mine and others research (Johannsen, 2009; Jochumsen & Hvenegaard Rasmussen, 2006) at least six different metaphorical understandings have been revealed: the user as a 1) citizen, the user as a 2) client or victim, the user as a 3) customer, the user as a 4) guest, and the user as a 5) creative partner. These metaphors or images are different in many respects. Typically, they are identified through analyses of the prevalent discourses within journals and literature of the library profession.

I think that the ability to prioritize and to develop public library services that addresses specific user segments will play a significant role and contribute to the future success of public libraries, both in terms of increased shares of users, achieved user satisfaction goals, and the development of targeted services. Here, user images and metaphors, created by the profession itself can supplement segments derived from official statistical sources and marketing research agencies. We'll now address the fourth and final of the research questions, concerning how the different perceptions and approaches to user segmenting have influenced the modification of existing and the development of new library services. The presentation is based on the two recent Danish case studies, conducted by the author (Johannsen, 2012; Johannsen, 2014).

Segments and services

Behind many of the presented approaches to library user segmentation has been an intention to use the achieved knowledge on segments to improve existing services or to develop new tailored services aimed at specified target groups. This aspect is, particularly, emphasized clear in *The Libraries of the future – knowledge on user segments for library development* (Moos-Bjerre, 2014: p.6). Besides, its result could also be applied for promotional purposes, prioritizing, and image cultivation.

The report on staff-less public libraries (Johannsen, 2012) contained no direct references to or data on specific user segments besides basic demographic categories (sex, age, geography, some basic library use patterns). Johannsen (2012: p. 339) thus concludes that there "still remains a number of unanswered questions concerning the use of … un-staffed libraries in Denmark. It is still not known whether the concept … attracts new types of users". Of course, anecdotal knowledge about user segments and their imagined different preferences have circulated among professionals. However, *The Libraries of the future* (Moos-Bjerre, 2014: pp. 87-89, 147) provides interesting new evidence on the users of the staff-less libraries. Among others, the report reveals that the two segments, high school youths from 15 to 19 years and university students are the groups where the highest percentage agrees that extended opening hours will increase their use of the public libraries. Another figure, shows how the 10 segments prioritize what could increase their library use. In nine out of 10 segments, extended opening hours - also without staff – is among the top three suggestions. As to the possible varied influence of hostliness on different library user segments, the Danish 2011-2012 guest-host-project report (Johannsen, 2014) has relatively little to say. Besides, relatively basic demographic data (sex) the before-and-after survey did not reveal segment specific data. Interesting but until now un-answered questions, here, could be how different user segments reacted towards the different innovative services, e.g., "extra sales" which was characterized by pro-active and somewhat aggressive communication styles. A

hypothesis could be, that the younger segments were more in favour of the pro-active style than the older – but, actually, we have only anecdotal knowledge and impression – not evidence – to rely on.
The above-mentioned examples have illustrated that knowledge about segmentation and segments might be useful for service development focusing on specific target groups.

Conclusion and perspectives

As to the first research questions, on characteristics of five segmentation approaches a number of different criteria were applied. Basically, a distinction between library use related criteria, socio-demographic and life-style criteria and criteria derived from analysis of public library texts. Furthermore, characteristics of the five approaches in terms of reliability, public library relevance, measurability and predictability were identified, compared, and evaluated. The results of the judgment of their respective strengths and weaknesses are summarized in table 1.
As to the second research question, on the unique characteristics of twostep cluster analysis, it was emphasized that the combination of lifestyle and socio-demographic features provided the approach with both unique features and potential useful opportunities.
The third research question dealt with the fifth, image and metaphorical approach which differed from the other four more sociological segmentation models in several respects. For example, were the differences between the three images (client/victim, customer and creative partner) judged as significantly higher than the internal differences between the rest. On the other hand, especially, the adoption of the customer perspective on users in public libraries seems to open the doors for more marketing oriented segmentation in the public library.
Finally, the translation of different public library service concept into the context of different user segments was discussed with starting points in two documented, public library cases: 1) staff-less libraries and 2) guest-host-public-library-service-concepts. It was demonstrated that segmentation approaches like the ones presented in the article had not – at least until now played a significant role in the life of the two projects. However, the potentials of developing and innovating services along advanced segmentation lines in public libraries seemed quite promising.

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About the author
Carl Gustav Johannsen holds a PhD in Business Studies and is an Associate Professor at The Royal School of Library and Information Science, University of Copenhagen, Denmark